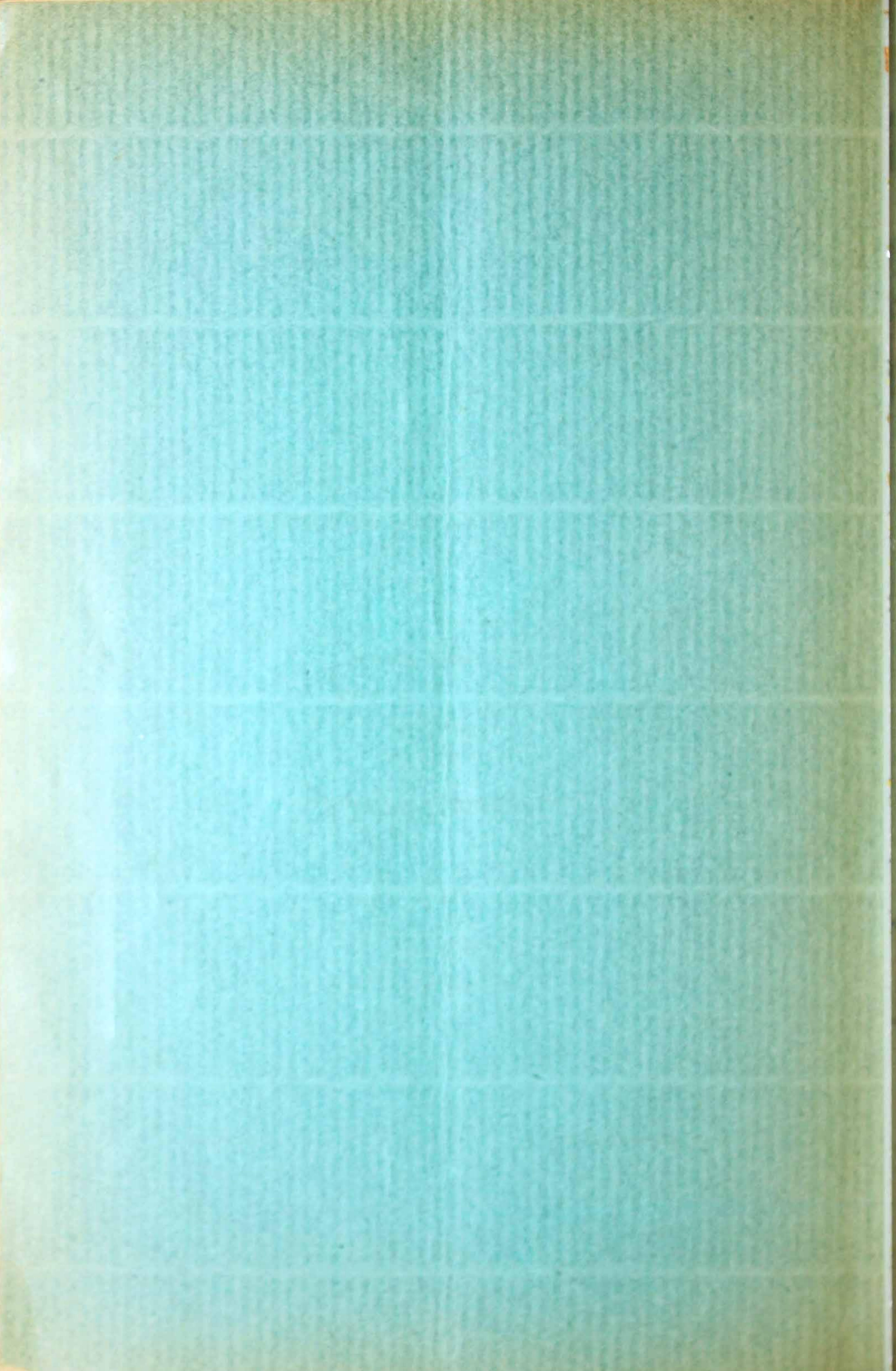


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# SANITARY ENGINEERING



# GERM PROOF WATER

FOR

HOSPITALS,

INSTITUTIONS.

SCHOOL HOUSES,

HOTELS AND RESTAURANTS

PRIVATE RESIDENCES, ETC.



THE ROESKE SYSTEM  
[PATENTED]



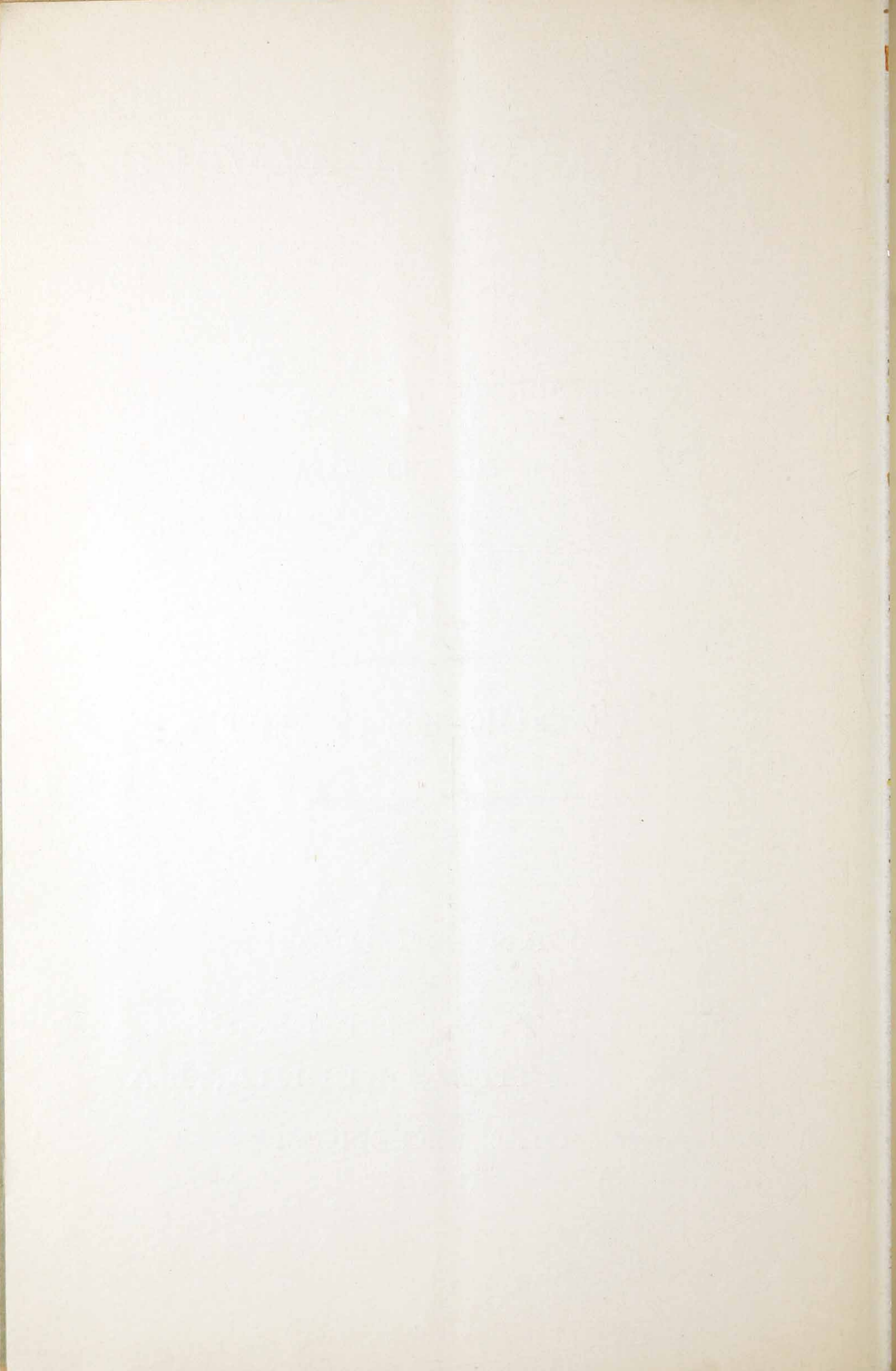
H LANDENBERGER,

Chemical Apparatus

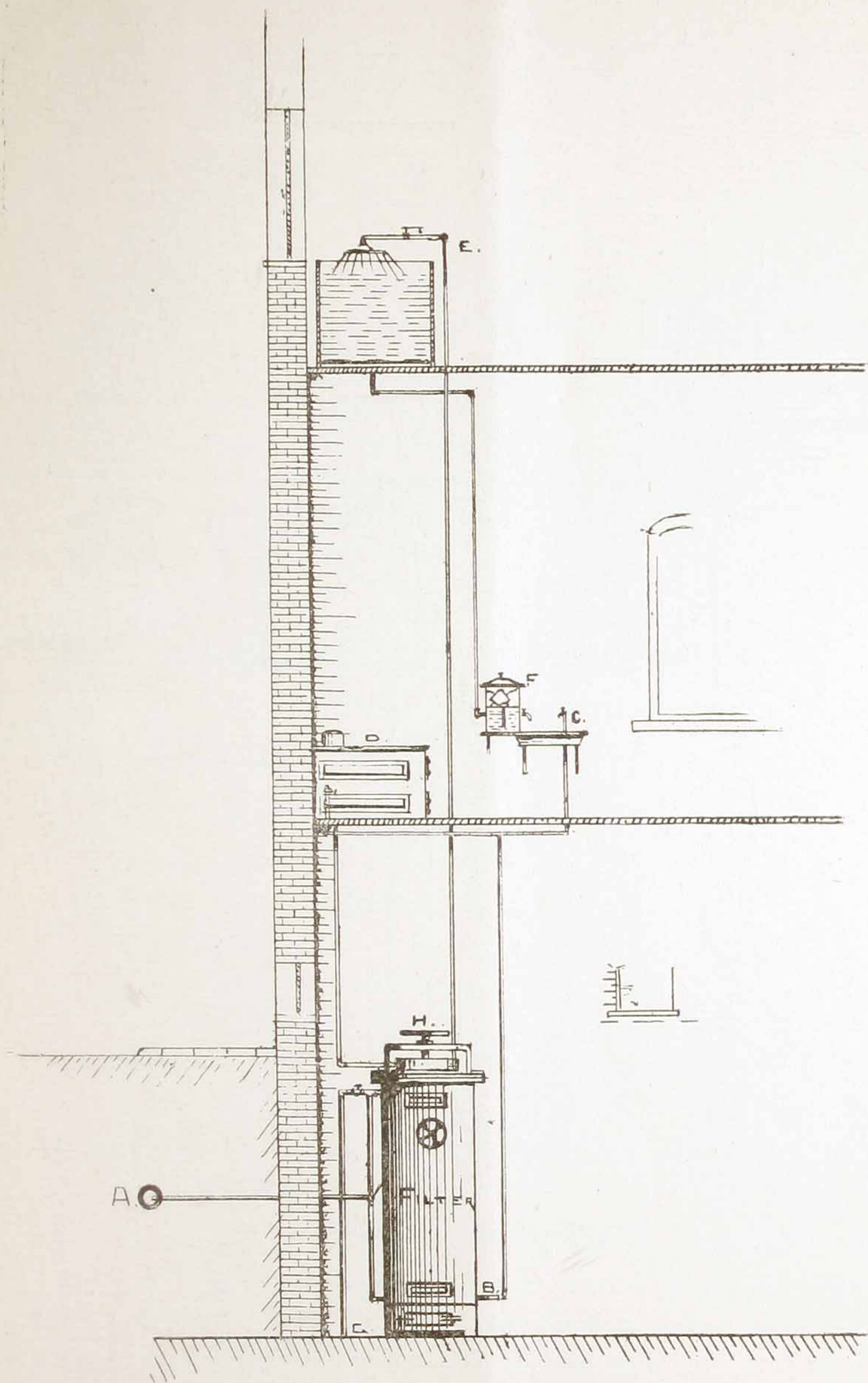
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— SOLE AGENCY. —



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MEDICAL science places great value on drinking water being perfectly free from animalculae, and it is therefore the duty of Sanitary Engineering to produce structures for the obtainance of such water. In the following a brief description will be found of the

### **The Roeske Filter and Sterilizer.**

Referring to the illustration let A be a main water supply pipe in street, and B a branch leading to a building. C is a filter of sufficient size to filter in the best manner all the water that enters. This water is distributed from the point D. The pipe E leads to the range and boiler F, from which clear hot water may be drawn by the faucets of pipe G. Branch H leads to the apparatus J; this is provided with a Bunsen Burner, which when lit, raises instantaneously the temperature of the passing water to 212 degrees Fahrenheit; this renders assurance that the microbes—if there are any in the water—are dead. From here the water returns through the pipe K to the filtering apparatus, which is so constructed that this portion of the water undergoes a second filtration, during which process it is also cooled. At the point L, it reaches in a sterile condition a storage receptacle. This may be of any size and shape; it may be placed where most convenient, or there may be none at all.

### **The Filter**

is in all cases properly adjusted according to the circumstances found in connection with a water supply, and consists of an iron vessel containing sand.

The popular idea of sand filtration is that it is a mere straining action, a partial or entire removal of suspended matter, the substances in solution remaining untouched. This, like many popular fancies is, in the main, though not strictly true. Thorough tests have proved that vinegar on being passed through sand loses most of its acid, the action gradually decreasing until the sand becomes charged, when the liquid passes unaffected.

Potato brandy, diluted with water, on being passed through sand, yields first water, then water and alcohol deprived of its fusil oil, and lastly, the original mixture. Salt may be partially removed, this is confirmed by the fact that fresh water may be obtained on almost any sea beach by driven pumps; the water from the ocean, of course, is filtered through the sand.

It seems, however, to be superfluous to investigate here scientifically what may or may not be accomplished by filtration; that much is proved that if a filter is large enough the most turbid water can be rendered clear and bright, equal to the finest spring water! Any person may be convinced of what the Roeske Filters accomplish by going into an office of the New City Hall or the Drexel Building, Philadelphia. All the water used there passes through a Roeske Filter—that one in the City Hall is of a capacity of one million gallons per day, and is probably the most perfect filter in existence.

Returning to the illustration, it will be noticed that the small filter through which that portion of the water is filtered over again, which has been heated to 212 degrees F., is placed on top of the sand filter and hung some-

what therein. The filter medium in this apparatus is an asbestos plate, and the water while passing through the same is lowered to the temperature of the ordinary water from main, which, for that purpose, surrounds that filter. Its top part is constructed similar to a copying press; when the wheel is given a few turns, the asbestos plate can, in a moment, be taken away, making room for a new one. Sufficient of these to last for a few years are furnished with each apparatus.

The sand in the large filter is washed by turning the handle of the cock M towards opposite side and in opening valve N. This causes an ascending flow of water into the drain; if, during this time, the hand wheel O is manipulated, the sand becomes agitated, and the arrested impurities are forced to escape. If this cleansing is carried out frequently the filter will remain a useful apparatus for a long time, without the necessity of any expense whatever.

We know, however, that many persons are apt to neglect; they clean the parlor windows, marble steps and stair rods regularly, the filters, however, are allowed to stand untouched, until they refuse to furnish the desired quantity of water. In this condition the retained impurities cling with such tenacity to the filter material and the inner walls, etc., of the filters, that their removal by a plain washing with cold water is impossible. Something remains even after the best manipulation of the sand or charcoal, whatever may be made use of in the various filters placed upon the market. If that is true what medical science establishes in reference to the germs of diseases, it follows that nothing but a periodical application of heat will be a

safeguard against their artificial generation in domestic filters, and therefore, the filters here in question are provided with facilities for that purpose.

The Roeske Filters are the only filters of that kind found on the market (U. S. Patent.) They do not cost more than others without this feature, and claim of superiority seems therefore justified without appeal to ignorance.

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*Filter and Sterilizers are made in various capacities, and results are guaranteed in every particular.*

*Correspondence Solicited.*

